

**UNITED NATIONS
DEVELOPMENT
PROGRAMME**



UNDP

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**APPROVAL OF UNDP ASSISTANCE TO A PROJECT OF
CAMBODIA**

IPF:(1992-96) \$105 319 000

**(CMB/92/016) - Technical Assistance for the Rehabilitation of the Power
Utilities in Phnom Penh and Sihanoukville**

Date of approval by the AC: ^{1/}	4 November 1992
Expected duration:	36 months
Proposed executing agency:	The World Bank (WB)
Government implementing agency:	The Supreme National Council of Cambodia (SNC)
Proposed UNDP contribution:	\$3 689 500 Source of funds: IPF
Total UNDP budget:	\$3 689 500
Administrative & Operational Support Services:	\$ 368 900 World Bank

Project background

The water and power services were brought to a complete halt in Cambodia during the 1975-1979 period and restored subsequently with facilities which had suffered significant damages. In the late 1980s only six civil Khmer engineers were left in the country. The reconstitution of a competent workforce at all levels, with the necessary qualifications and skills for the management and operations of the production and distribution systems is of utmost importance in the ongoing phase of rehabilitating the urban water and power services. Many of the existing staff have little or no exposure to modern technology and concepts, and have little familiarity with foreign languages.

In Phnom Penh, power is supplied 24 hours a day although with frequent and unpredictable outages. Whereas the total installed generating capacity has not changed since the last two years, the available capacity has gone down sharply over the same period due to the poor condition of the equipment and technical limitations on continuous running. Accordingly systematic black-out is practised to keep the demand down within the limit of the effective generating capacity. The 15 kv distribution network has sufficient capacity; however, most of the sub-stations require rehabilitation especially for safety and reliability. The real burden is on the low voltage system which is either non existent or, of insufficient capacity and poor design.

In Sihanoukville, power was supplied from 18:00 hours to 24:00. It was proposed to extend the supply to 24 hours per day as of July 1992. There appears to be no problem in meeting the present demand on the system. Even when electricity supply becomes available 24 hours per day the generation capacity will exceed the demand. The major problem in Sihanoukville is the poor reliability of the power supply which is mainly due to the lack of tools for diesel maintenance, general electrical work and line work. To address this issue the Government requested UNDP assistance under the present approval.

^{1/} This Fact Sheet reflects the status of the project/revision at the time it was approved by the Action Committee; modifications to the project/revision may have occurred subsequently.

Description of project

The development objective of the project is to ensure the efficient and effective provision of electric power supply in a sustainable manner in Phnom Penh and Sihanoukville.

The immediate objective is to enhance the capacity of the power utilities in Phnom Penh and Sihanoukville in the field of management, operation, maintenance, accounting, billing and collection systems.

Project activities will include: (a) increasing the operational capacity of the power plants and facilities in the two municipalities from the present 50 to 75 per cent; (b) rehabilitating the distribution systems through: > the restoration of meters on all connections; > the installation of adequate relays and safe switching equipment on all sub-stations; and, > the reconstruction of the low voltage distribution system; (c) designing and implementing a system loss reduction programme so as to reduce the actual 60 per cent physical and commercial losses to 40 per cent of the total power production; (d) putting in place effective billing and collection systems to recover 80 per cent of commercial, industrial, diplomatic and domestic billing; (e) providing on-the-job-training to 40 engineers and unit managers in the preparation and application of operations, maintenance and monitoring procedures for the power utilities; (f) conducting vocational training in local institutions for 20 students who will be ready to enter the utilities after two years and for 20 others, one year later; (g) providing fellowships for higher studies abroad to 10 fresh graduates from local institutes to join the power utility manpower upon return; (h) finalizing and implementing the institutional restructuring and regulatory framework for the power sector; (i) presenting a report on the the medium-term priority investments needed in the power sector to the donor agencies for funding; (j) preparing a master plan for human resources development in the power sector; (k) putting in place a financial accounting system for the power utilities; and (l) implementing an operational and effective computerized data base and computerized billing system covering all major and medium size industrial and commercial customers.

Inputs

UNDP will provide 24 work-months for a senior power supply management advisor, 24 work-months for a power system planner, 24 work-months for an energy planner, eight work-months for a revenue and collection advisor, 168 work-months for administrative support staff, 24 work-months for a UNV-power distribution engineer, 24 work-months for a UNV-power electrical engineer, 24 work-months for a UNV-diesel engine specialist in USSR machines, 24 work-months for a UNV-diesel engine specialist, 24 work-months for a UNV electrical maintenance engineer specialized in USSR equipment, 24 work-months for a UNV-electrical maintenance engineer, 24 work-months for a UNV-workshop superintendent, 24 work-months for a UNV-store superintendent, 24 work-months for a UNV-power distribution engineer; a subcontract to prepare the medium-term investment prioritization study for the power sector; 288 work-months for fellowships abroad, 600 work-months for in-country fellowships, 23 work-months for study tours, and in-service language training; expendable and non-expendable equipment; and miscellaneous costs.

Financial data

	\$
Personnel	1 779 000
Subcontract	120 000
Training	413 000
Equipment	1 337 500
Miscellaneous	40 000
Total	<u>3 689 500</u>
